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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Technology Center 2100

Application Number: 09/577,231
Filing Date: May 23, 2000
Appellant(s): LEWIS, LUNDY

Rick A. Toering Reg. No. 43195
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/29/2007 appealing from the Office action mailed 02/27/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

The present application claims priority to U.S. Provisional Patent Application Serial No. *60/135,492,* filed May 24, 1999, entitled "Method and Apparatus for Service Level Management." Appellants are also pursuing Appeals to the Board of Patent Appeals and Interferences in the following applications, each of which also claim priority to the U.S. Provisional Patent Application identified above:

(1) U.S. Patent Application Serial No. 09/577,232, entitled "Method and Apparatus for Service Analysis in Service Level Management (SLM)," filed May 23, 2000. Appellant's Brief on Appeal was filed April 23, 2007;

(2) U.S. Patent Application Serial No. 09/577,224, entitled "Method and Apparatus for Reactive and Deliberative Service Level Management (SLM)," filed May 23, 2000. Appellant's Request for Oral Hearing was filed July 17, 2007; and

(3) U.S. Patent Application Serial No. 09/577,225, entitled "Method and Apparatus for Service Level Management (SLM)," filed May 23, 2000. Appellant's Notice of Appeal was filed April 20, 2007.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,304,892	Bhoj et al.	10-2001
6,249,755	Yemini et al.	6-2001
6,052,722	Taghadoss	4-2000
6,233,449	Glitho et al.	5-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject

matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bhoj et al. (6304892) (hereinafter Bhoj) in further view of Yemini et al. (6249755) (hereinafter Yemini).

As per claim 4, as closely interpreted by the Examiner, Bhoj teaches a method of monitoring a state of service supported by a network, wherein the network includes a plurality of network components, wherein the service supports a business process under service level management in association with a service level management domain, the method comprising the steps of:

selecting one or more network components on which the service depends from among the plurality of network components, (e.g., col. 5, line 65 – col. 6, line 35);

monitoring the one or more select network components to determine the state of the service , (e.g. col. 3, line 62 – col. 4, line 11 & col. 8, lines 3 – 20);

monitoring the state of the service to detect a change in the state, (e.g. col. 3, line 62 – col. 4, line 11 & col. 8, lines 3 – 20), but does not specifically teach when the state of the service changes,

determining a cause of the change in the state of the service by performing an action, the action comprising one or more of:

invoking a routine to determine an operational characteristic of at least one of the one or more selected network components,

constructing a database query to determine the operational characteristic of at least one of the selected network components.

Yemini teaches selecting one or more network components on which the service depends from among the plurality of network components, (e.g., col. 8, lines 14 – 59);

monitoring the state of the service to detect a change in the state, (e.g., col. 8, lines 17 – 67); and

mapping the one or more selected network components to the service, (e.g., col. 8, lines 17 – 67);

when the state of the service changes, determining a cause of the change in the state of the service by performing an action, the action comprising one or more of:

invoking a routine to determine an operational characteristic of at least one of the one or more selected network components,

constructing a database query to determine the operational characteristic of at least one of the selected network components, (e.g., col. 8, lines 17 – 67), and

requesting a change to one or more parameters of at least one of the selected network components.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Yemini with Bhoj because mapping out where a problem is occurring in a network can aid in finding a resolution to fix said network problem.

Claims 13 – 17, 19 – 35, 37 – 53 and 55 – 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yemini et al. (6249755) (hereinafter Yemini) in view of Bhoj et al. (6304892) (hereinafter Bhoj) in further view of Taghadoss (6052722).

As per claim 13, as closely interpreted by the Examiner, Yemini teaches a method for monitoring a service, the service supporting a business process under service level management in association with a service level agreement, wherein the service is monitored by an enterprise

management system, wherein the business process depends on at least a portion of a network, the method comprising the steps of:

mapping at least one component of the network on which the service depends to the service, (e.g., col. 8, lines 17 – 67);

monitoring, at the enterprise management system, at least one parameter of the mapped network component, the at least one parameter indicating an operational characteristic of the network component that is indicative of a state of the service, wherein the state of the service is indicative of a current level of service relative to an agreed upon level of service in the service level agreement, (e.g., col. 12, lines 22 – 53), but does not specifically teach determining, at the enterprise management system, the state of the service from the parameter of the monitored network component; and

monitoring, at the enterprise management system, the state of the service to provide service level management for the business process that indicates the current level of service relative to the agreed upon level of service.

Bhoj more clearly teaches a method for monitoring a service supporting a business process under service level management in association with a service level agreement, wherein the service is monitored by an enterprise management system, wherein the business process depends on at least a portion of a network, the method comprising the steps of:

mapping at least one component of the network on which the service depends to the service, (e.g., col. 5, line 65 – col. 6, line 35);

monitoring, at the enterprise management system, the state of the service to provide service level management for the business process that indicates the current level of service relative to the

agreed upon level of service, (e.g. col. 3, line 62 – col. 4, line 11 & col. 8, lines 3 – 20). It would have been obvious to one of ordinary skill in the art, at the time the invention was conceived, to combine Bhoj with Yemini because it allows management of the services of the entire data access network system (or part of it) without any one domain having complete access to each of the data service systems of the data access network system. This also allows the data service systems to exchange information about how a service provider is complying with its service level agreements with its customer, outsourcer, or partner. In addition, the arrangement enables the customers of the data access network system to monitor and verify the delivered services against the guarantees offered by their service providers without having complete access to the service provider's system, (e.g., Bhoj, cols. 3 – 4).

Taghadoss teaches associating a component of the network to the service supporting the business process under service level management in association with the service level agreement, (e.g., col. 5, lines 16 – 36);

determining, at the enterprise management system, the state of the service from the parameter of the monitored network component, (e.g., col. 5, lines 16 – 36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Taghadoss with the combine system of Yemini and Bhoj because of similar reasons stated above.

Referencing claim 27, as closely interpreted by the Examiner, Yemini teaches a system for monitoring a service supporting a business process under service level management in association with a service level agreement, wherein the service is monitored by an enterprise

management system, wherein the business process is performable in connection with at least a portion of a network, the system comprising:

a monitoring mechanism for monitoring a parameter of the associated network component at the enterprise management system, the parameter indicating an operational characteristic of the network component that is indicative of a state of the service, wherein the state of the service is indicative of a current level of service relative to an agreed upon level of service in the service level agreement, (e.g. col. 2, lines 4 – 46); and

a service monitoring mechanism for monitoring, at the service management system, the state of the service supporting the business process to provide service level management of the business process that indicates the current level of service relative to the agreed upon level of service, (e.g. col. 2, lines 4 – 46). Yemini does not specifically teach a mapping mechanism for associating a component of the network to the service supporting the business process under service level management in association with the service level agreement;

a reasoning mechanism for determining, at the service management system, the state of the service from the parameter of the monitored network component.

Bhoj teaches a system for monitoring a service supporting a business process under service level management in association with a service level agreement, wherein the service is monitored by an enterprise management system, wherein the business process is performable in connection with at least a portion of a network, the system comprising:

a mapping mechanism for associating a component of the network to the service supporting the business process under service level management in association with the service level agreement, (e.g. col. 3, line 62 – col. 4, line 11 & col. 8, lines 3 – 20). It would have been obvious to one of

ordinary skill in the art, at the time the invention was conceived, to combine Bhoj with Yemini because it allows management of the services of the entire data access network system (or part of it) without any one domain having complete access to each of the data service systems of the data access network system. This also allows the data service systems to exchange information about how a service provider is complying with its service level agreements with its customer, outsourcer, or partner. In addition, the arrangement enables the customers of the data access network system to monitor and verify the delivered services against the guarantees offered by their service providers without having complete access to the service provider's system. Taghadoss teaches a mapping mechanism for associating a component of the network to the service supporting the business process under service level management in association with the service level agreement, (e.g., col. 5, lines 16 – 36);

a reasoning mechanism for determining, at the service management system, the state of the service from the parameter of the monitored network component, (e.g., col. 5, lines 16 – 36). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Taghadoss with the combine system of Yemini and Bhoj because of similar reasons stated above.

Referencing claim 28, as closely interpreted by the Examiner, Yemini teaches the mapping mechanism associates a parameter of the service with the parameter of the associated network component, the service parameter comprising a variable having a state which represents an operational characteristic of the service provided by the network, (e.g. col. 2, lines 4 – 46).

Referencing claim 29, as closely interpreted by the Examiner, Yemini teaches a value for the service parameter is determined from a value of the parameter of the associated network component, (e.g. col. 8, lines 17 – 67).

Referencing claim 30, as closely interpreted by the Examiner, Yemini teaches the reasoning mechanism comprises a rule-based reasoning system for determining the condition of the service teaches, (e.g. col. 2, line 47 – col. 3, line 50).

Referencing claim 31, as closely interpreted by the Examiner, Yemini teaches the reasoning mechanism comprises a model-based reasoning system for determining the condition of the service, (e.g. col. 5, lines 42 – 64).

Referencing claim 32, as closely interpreted by the Examiner, Yemini teaches the reasoning mechanism comprises a case-based reasoning system for determining the condition of the service, (e.g. col. 3, line 51 – col. 4, line 27).

Referencing claim 33, as closely interpreted by the Examiner, Yemini the reasoning mechanism comprises a state-transition graph reasoning system for determining the condition of the service, (e.g. col. 12, line 54 – col. 13, line 7, *"causality graph"*).

Referencing claim 34, as closely interpreted by the Examiner, Yemini teaches the reasoning mechanism comprises a codebook reasoning system for determining the condition of the service, (e.g. col. 9, lines 1 – 30).

Referencing claim 35, as closely interpreted by the Examiner, Yemini teaches the reasoning mechanism determines the condition of the service from a mathematical simulation of the service, (e.g. col. 24, line 29 – col. 25, line 8).

Referencing claim 40, as closely interpreted by the Examiner, Yemini teaches the operation invokes a query to a database to determine the operational characteristic of the network component, (e.g. col. 7, lines 9 – 60).

Referencing claim 41, as closely interpreted by the Examiner, Yemini teaches the operation invokes a second reasoning mechanism to determine the operational characteristic of the service, (e.g. col.12, line 54 – col. 13, line 7 & col. 16, line 53 – col. 17, line 40).

Referencing claim 42, as closely interpreted by the Examiner, Yemini teaches the operation invokes an inspection of the operational characteristic of the network component, (e.g. col.12, line 54 – col. 13, line 7 & col. 16, line 53 – col. 17, line 40).

Referencing claim 43, as closely interpreted by the Examiner, Yemini teaches the inference mechanism selects rules from the rule repository and invokes operations to implement the

selected rules until the service achieves a desired condition, (e.g. col.12, line 54 – col. 13, line 7 & col. 16, line 53 – col. 17, line 40).

Referencing claim 44, as closely interpreted by the Examiner, Yemini teaches the service parameter represents one or more of the following operational characteristics of the service:

availability;

reliability;

usability;

integrity;

security;

performance;

configuration; and

status, (e.g. col. 8, lines 17 – 67).

Claims 13 – 17, 18 – 26, 37 – 39, 45 – 53 and 55 – 62 are rejected for similar reasons as stated above.

Claims 18, 36 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yemini, Bhoj and Taghadoss as applied to claims 13, 27, 35 and 49 above, and in further view of Glitho et al. (6233449) (hereinafter Glitho).

As per claim 36, as closely interpreted by the Examiner, Yemini teaches an action being taken when the parameter of the monitored network component crosses a threshold, (e.g. col. 25, lines 9 – 18), but does not specifically teach the use of an agent associated with the monitored network component to generate an alarm. Glitho teaches the use of an agent associated with the monitored network component to generate an alarm, (e.g. col. 7, lines 12 – 45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Glitho with the combine system of Yemini, Bhoj and Taghadoss because utilizing an alarm in a system could alert a user about different fault events from a hardware or software device, giving the user a chance to correct any faults in the system.

Claims 18 and 54 are rejected for similar reasons as stated above.

Response to Arguments

Applicant's arguments filed 11/27/2006 have been fully considered but they are not persuasive.

In the Remarks, Applicant argues in substance that neither Bhoj nor Yemeni, teach or suggest, "selecting one or more network components on which the service depends from among the plurality of network components" [and] "mapping the one or more selected network components to the service," as recited in claim 4.

As to the first argument, Examiner asks the Applicant to draw their attention to the claim language that was newly added to claim 4, in which it states selecting **one or more** network components. This could be interpreted as the method always selecting all of the network components to be monitored. This would lead one to interpret the claim language in similar light of the prior art of Bhoj and Yemeni, in that all components, when entered into the system, are automatically "selected" to be monitored. Furthermore, the Applicant's specification discloses the "component" to possibly be, *"A network includes four general categories of components: transmission devices, transmission media (also referred to as lines or links) among the devices, computer systems, and applications (residing on the computer systems and transmission devices).* ***A component is used broadly herein to include hardware, software, firmware, applications, processes, etc****. Computer systems include servers, desktops, workstations, etc. Transmission media is used broadly to include copper, wireless, optical, satellite, etc. Network is also used broadly to include a business network (sometimes called an enterprise, typically owned by the business), a service provider network (not typically owned by the SP, e.g., an intermediary between the Internet and customer), telephony networks, etc. The information conveyed on the network is meant to broadly include data, voice, video, etc."*, page 20 of Applicant's specification. This definition of components is very broad even by Applicant's definition. Yemeni teaches in column 8, for example, a component being monitored and the component is defined as a Link which is within the range of the Applicant's broad definition. Furthermore, with respect to mapping the one or more selected network components to the service is also taught by the prior art above. More specifically, as an example, Yemeni teaches a relationship to a service that has failed and a matrix to place this data in, column 8 et seq. As stated in column 8,

if a relationship is connected to a link and an event such as a link failure then it is obvious what the service of the link is and that would be to provide a communication between two nodes and that the connection is faulty. This is just one example of how the prior art reads on the claim language. Furthermore, relationship information is also taught in Bhoj in columns 6 et seq. more specifically, as an example, column 9, lines 25 – 52, which state the service a server would have such as email and a measurement and metrics that are available from each component that is being monitored.

Applicant further argues that the prior art used to teach the limitations of the independent claims of 13, 27 and 49 are also not present, citing the same limitation of mapping as described above. Not only does the prior art of Bhoj and Yemeni teach mapping, Applicant even admits in their arguments stated on page 16 of the Remarks that Taghadoss teaches a type of mapping as is quoted by the Applicant, " Taghadoss relate to a "more efficient way of identifying the actual state and operational status of managed network resources." Taghadoss states that a network resource could be "physical hardware, subnetworks, networks, end-to-end paths, customers, etc.", column 5, lines 32 – 35, and the operational status could be interpreted as the service that is stated by the Applicant. All of which would read on the claim language.

(10) Response to Argument

In the Arguments, Appellant argues in substance that neither Bhoj nor Yemini, either alone or in combination, teaches at least the feature of "selecting one or more network components on which the service depends from among the plurality of network components."

As to the First Argument, the Appellant's definition of component is, "used broadly herein to include hardware, software, firmware, applications, processes, etc", page 20, lines 1 – 10. This would mean that most anything found in a network is understood as a "network component" and is monitored. Therefore, one example of the prior art teaching the claimed invention can be found in Bhoj starting at column 9, line 25. In which, it is discussed that specific "components" of a service is recorded and utilizes the example of an email which utilizes a email server host, network connecting the email host to the Internet, email application, name server and so on. The "interdependencies" that the Appellant discusses in Bhoj is what is captured which is the cause and effect between the components of a service. The service model in Bhoj also identifies the measurements and metrics that are available from each component. This would mean that if something went wrong in the email system, for one example, the server is not performing at its potential then the system finds the effect of this error or lack of full performance. That would also mean that one "component" of the email system is in error and therefore the system "selects" this error to find out why it is in error. The claim language could also be interpreted as all network components being selected and therefore if a system monitors all components all the time, this would read on the claim language. Further support is found in columns 6 – 8 and cited in the above rejection. Yemini further teaches this limitation starting at column 8, line 13, e.g., a four-step process.

In the Arguments, Appellant argues in substance that neither Bhoj nor Yemini, either alone or in combination, teach at least the feature of "mapping the one or more selected network components to the service."

As for the Second argument, although not explicitly stated in Bhoj, it could be understood that if, using the email example above, a service model is utilized in a system then the components in the email service are "mapped" to there service which is email or that the cause and effect discussed in Bhoj could be interpreted as mapping a cause, email server is down, connected to an effect, no one gets their email service.

Yemini further teaches the use of mapping problems in a network to a network component or a network component to the problem. As seen in column 8, in the four steps, it is stated that a matrix is used to map symptoms to likely problems. In column 12, line 54 et seq. it could also be interpreted that a type of "cause and effect" is used with a mapping of a component, that is in error, with a service that is lacking. Therefore, the prior art is still mapping a service, whether an error or not, to a "network component", i.e., software, hardware, firmware, etc.

In the Arguments, Appellant argues in substance that neither Bhoj nor Yemini, either alone or in combination, teach at least the feature of, "monitoring the one or more selected network components to determine the state of the service" or "when the state of the service changes, determining a cause of the change in the state of the service."

As to the Third argument, both pieces of prior art utilize service level agreement, (SLA). SLA is. monitoring a device or "network component" for a specific level and if the level fall under that level or "changes in its state" then the network system attempts to correct this change. Appellant can find the claim language in the same areas cited above. To be more specific Bhoj teaches

monitoring a service and if that service is in error or "changes in a state" then it is determined what was the cause and to correct the error so the user can receive the agreed upon service level, col. 5, lines 65 et seq.

Furthermore, both Bhoj and Yemini teach a type of system that determines what causes the change in the state of service. Bhoj teaches linking an service that is below its required service level with what is causing the error in the same areas stated above. Yemini teaches mapping an error, which can be interpreted as a change in a state, to what causes the error utilizing a mapping matrix, column 11, lines 46 et seq.

In the Arguments, Appellant argues in substance that neither Bhoj, Yemini nor Taghadoss, either alone or in combination, teach at least the feature of, "mapping at least one component of the network on which the service depends to the service", "monitoring, at the enterprise management system, at least one parameter of the mapped network component, the at least one parameter indicating an operational characteristic of the network component that is indicative of a state of the service," or "monitoring… the state of the service to provide service level management for the business process that indicates the current level of service relative to the agreed upon level of service," as recited in independent claim 13.

As to the Forth argument, both Bhoj and Yemini teach "mapping at least one component of the network on which the service depends to the service", "monitoring, at the enterprise management system, at least one parameter of the mapped network component, the at least one parameter indicating an operational characteristic of the network component that is indicative of a state of

the service," or "monitoring... the state of the service to provide service level management for the business process that indicates the current level of service relative to the agreed upon level of service," as stated above in the previous responses to arguments. Taghadoss also teaches similar aspects of the claim language but in light of a business process. In the Appellant's specification it is stated that a business in a business process is used broadly herein to mean any entity, such as a company, department, ... Internet service provider, page 19. Taghadoss teaches a type of Internet service provider and a network management system that monitors their resources for their users, column 4, line 1, "ITU, TMN, NML and business management layer" and column 5, line 15 – column 6, line 24. In these cited areas, it appeared to address the Appellant's claim direction of adding in the "business process" limitation while still being able to monitor the devices and parameters they produce in the system.

All other arguments fall under the same rational and cited areas of the prior art as stated above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

DE

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